

Ring-Tite[®]

GASKETED SEWER PIPE

100mm - 1050mm (4" - 42")

42" DR35 Now Available!



IPEX

The growing demand for an effective, all-out attack on water pollution highlights the need for improved sanitary sewage collection systems. As well, the additional cost of treating ground water infiltration underlines the requirement for watertight systems.

IPEX is committed to developing better-designed piping systems with superior performance characteristics such as tight joints, which virtually eliminate infiltration and leakage.



APPLICATIONS

IPEX Ring-Tite PVC gravity sewer pipe is designed to meet the ever-increasing needs of the next century. Ring-Tite pipe is the perfect solution for safe and efficient conveyance of industrial, sanitary and stormwater sewage. Ring-Tite pipe is available in sizes 100mm – 1050mm (4" – 42").

ADVANTAGES

Tight Joints

IPEX Ring-Tite pipe is manufactured with a factory installed gasket. This factory-made joint eliminates the need to insert rings in the field, reducing the possibility of the rings dislodging during assembly. The Ring-Tite pipe joint, with its close manufacturing tolerances, easily passes a hydrostatic test of 345 kPa (50 psi).

Designed with the Environment in Mind

A properly installed IPEX pipe and fittings system restricts daily infiltration and leakage to a maximum of 4.6 litres for every millimetre in diameter per kilometre per day (50 U.S. gal./in.dia./mile/day). IPEX DR35 and DR28 pipe may be safely installed alongside potable water pipelines.

Lower Water Purification Costs

This type of low infiltration system reduces the costs involved in sewage treatment, providing substantial savings to the taxpayer. IPEX DR35 and DR28 gravity pipe joints do not leak, and are totally resistant to root intrusion.

DIMENSIONS



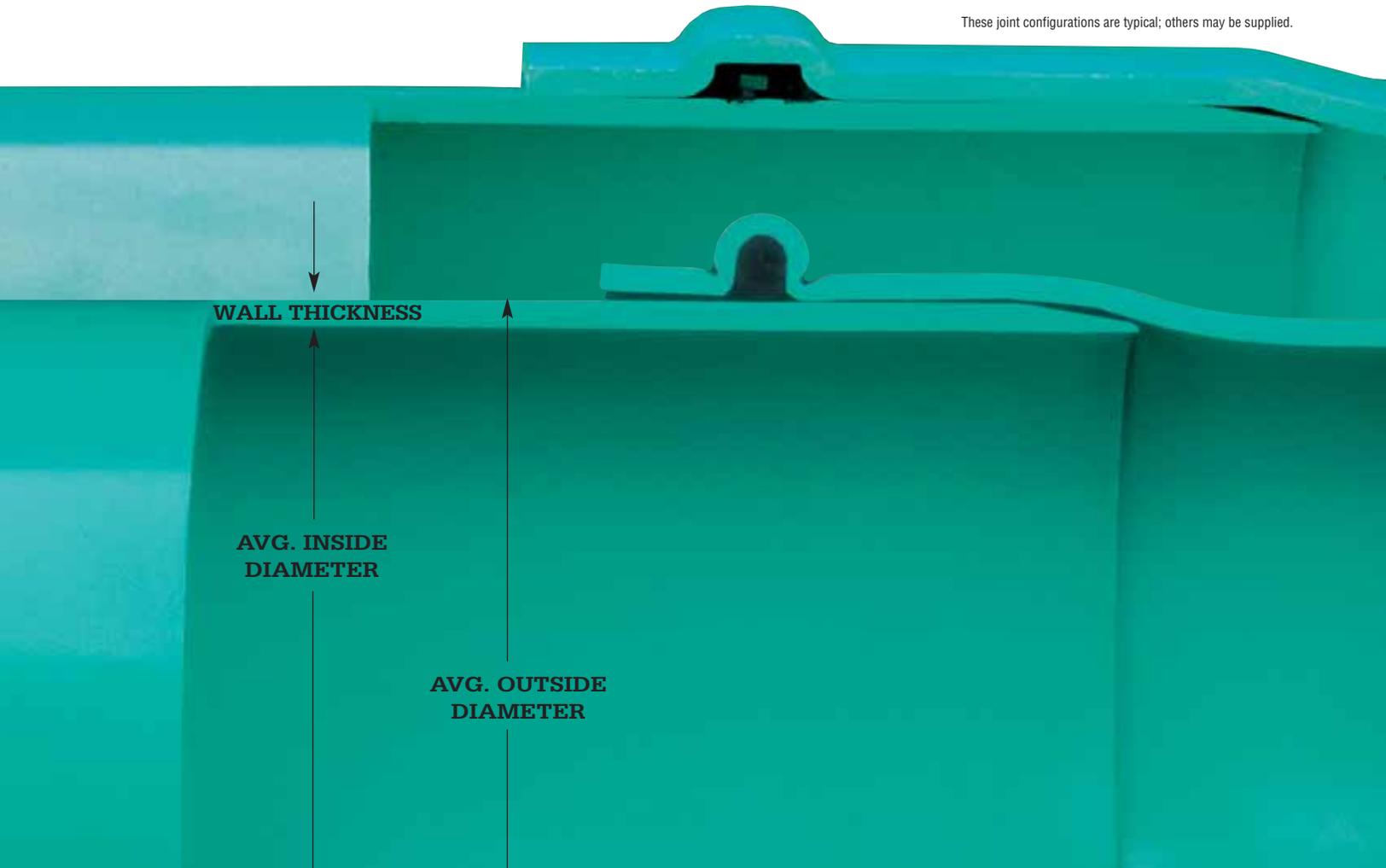
Dimensions in Millimetres

Nominal Size	Avg. I.D.	Wall Thickness	Avg. O.D.
DR35			
100	100.94	3.06	107.06
135	135.08	4.09	143.26
150	150.29	4.55	159.39
200	201.16	6.10	213.36
250	251.46	7.62	266.70
300	299.36	9.07	317.50
375	366.42	11.10	388.62
450	447.87	13.57	475.01
525	527.99	16.00	559.99
600	594.00	18.00	630.00
675	669.42	20.29	710.00
750	766.36	23.22	812.80
900	917.22	27.79	972.80
1050	1065.72	32.29	1130.30
DR28			
100	99.42	3.82	107.06
135	133.02	5.12	143.26
150	148.01	5.69	159.39

Dimensions in Inches

Nominal Size	Avg. I.D.	Wall Thickness	Avg. O.D.
DR35			
4	3.97	0.12	4.21
5	5.32	0.16	5.64
6	5.92	0.18	6.28
8	7.92	0.24	8.40
10	9.90	0.30	10.50
12	11.79	0.36	12.50
15	14.43	0.44	15.30
18	17.63	0.53	18.70
21	20.79	0.63	22.05
24	23.39	0.71	24.80
27	26.36	0.80	27.95
30	30.17	0.91	32.00
36	36.11	1.09	38.30
42	41.95	1.27	44.50
DR28			
4	3.91	0.15	4.21
5	5.24	0.20	5.64
6	5.83	0.22	6.28

These joint configurations are typical; others may be supplied.





STANDARDS

IPEX Ring-Tite pipe meets these standards:



CSA B182.2



NQ 3624-130/135



ASTM D3034
ASTM F679

OPS

Ontario Provincial
Standards

Testing the Joint

The gasketed joint must withstand hydrostatic pressure levels of at least 100 kPa (15 psi) and a negative vacuum pressure of -75 kPa (-11 psi) or 22" of mercury, in compliance with CSA B182.2, ASTM D3034, NQ 3624-130 and NQ 3624-135 standards. IPEX Ring-Tite pipe is tested by a third-party and is capable of handling higher pressures up to 345 kPa (50 psi).

Measuring Strength

The stiffness of DR35 and DR28 pipe is measured according to the ASTM D2412 and NQ 3624-060 test method, in compliance with CSA B182.2, ASTM D3034, ASTM F679, NQ 3624-130 and 135 standards. Pipe stiffness must be at least 320 kPa (46 psi) for DR35, and 625 kPa (90 psi) for DR28.

DR35 and DR28 are compressed between two parallel plates to a deflection of 40%, according to ASTM D2412, in compliance with CSA B182.2, ASTM D3034, NQ 3624-130 and 135 standards. Additional in-house testing increases deflection until both walls touch. In both cases, test samples must show no signs of cracking or rupture.

Impact Tests

The following test method is not a measure of the practical strength of the pipe, but nevertheless determines the homogeneity of base materials. During the quality control process, the impact resistance of DR35 and DR28 is established at 0°C (32°F) for CSA and at room temperature for ASTM. Pipe must remain intact and show absolutely no signs of cracking following impact with the tup.

Impact Requirements

Size		CSA 0°C (32°F)		ASTM 23°C (73°F)	
mm	in	Joules	ft.LbF	Joules	ft.LbF
100	4	135	100	203	150
135	5	150	111	-	-
150	6	165	122	284	210
200	8	175	129	284	210
250	10	190	140	299	220
300	12	205	151	299	220
375	15	230	170	299	220
450	18	275	203	299	220
525	21	300	221	299	220
600	24	300	221	299	220
675	27	300	221	299	220
750	30	300	221	299	220
900	36	300	221	299	220
1050	42	300	221	299	220





Percent (%) Deflection of RING-TITE DR35 AND DR28 PIPE

ASTM EMBEDMENT MATERIAL CLASSIFICATION	DENSITY (PROCTOR) AASHTO T-99	E' kPa (psi)	DR	HEIGHT OF COVER m (ft.)													
				0.3 (1)	0.6 (2)	1 (3.3)	2 (6.6)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)	7 (23.0)	8 (26.3)	9 (29.5)	10 (32.8)	15 (49.2)	
Manufactured Granular Angular	CLASS I	90%	20 700 (3,000)	35	0.7	0.5	0.3	0.4	0.4	0.6	0.7	0.9	1.0	1.2	1.3	1.4	2.2
			28	0.7	0.5	0.3	0.3	0.4	0.6	0.7	0.8	1.0	1.1	1.3	1.4	2.1	
Clean Sand & Gravel	CLASS II	90%	13 800 (2,000)	35	1.1	0.7	0.5	0.5	0.6	0.8	1.1	1.3	1.5	1.7	1.9	2.1	3.2
			28	1.0	0.7	0.5	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	3.0	
	CLASS II	80%	7 000 (1,000)	35	2.0	1.4	1.0	1.0	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0	6.0
			28	1.8	1.2	0.9	0.9	1.1	1.5	1.8	2.2	2.6	2.9	3.3	3.7	5.5	
Sand & Gravel with Fines	CLASS III	90%	7 000 (1,000)	35	2.0	1.4	1.0	1.0	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0	6.0
			28	1.8	1.2	0.9	0.9	1.1	1.5	1.8	2.2	2.6	2.9	3.3	3.7	5.5	
	CLASS III	85%	3 500 (500)	35	n/r	2.5	1.7	1.8	2.2	2.9	3.7	4.4	5.1	5.9	6.6	7.3	11.0
			28	n/r	2.0	1.5	1.5	1.9	2.5	3.1	3.7	4.4	5.0	5.6	6.2	9.3	
Silt & Clay	CLASS IV	85%	2 760 (400)	35	n/r	3.0	2.1	2.2	2.6	3.5	4.4	5.3	6.1	7.0	7.9	8.8	13.1
			28	n/r	2.4	1.7	1.8	2.2	2.9	3.6	4.3	5.1	5.8	6.5	7.2	10.8	

1. Deflection values shown include effect of H-20 live load and dead load.
2. External loading based upon a prism load of soil weight of 1 900 kg/m³ (120 lbs. per cubic foot).
3. Bedding classifications correspond to ASTM D2321.
4. The deflection lag factor is 1.0 for a prism load.
5. Recommended maximum deflection of 7.5% provides a generous 4 to 1 factor of safety.
6. n/r = not recommended

The performance of PVC pipe is principally determined by long-term deflection which is easily controlled and tested. The prism load method is typically used to evaluate the load on PVC pipe. This equals the actual maximum load the pipe will withstand.

The values in the table above are long-term deflections after final consolidation of the backfill in the pipe zone. IPEX recommends that the maximum long-term deflection for flexible pipe should be set at 7 1/2%. This deflection limit provides the engineer a generous 4 to 1 (30% ÷ 7.5) safety factor against leakage.



General

IPEX Ring-Tite DR35 pipe is available in sizes 100mm – 1050mm (4" – 42"). Ring-Tite DR28 pipe is available in sizes 100mm, 135mm and 150mm (4", 5" and 6").

Product

Pipe and gaskets must be certified to CSA B182.2 and conform to ASTM D3034, ASTM F679, NQ 3624-130 and NQ 3624-135 standards.

Material

Pipe must be manufactured from 12454-B or 12364-C compound. Clean, recycled material supplied by the pipe manufacturer may also be used.

Pipe Stiffness

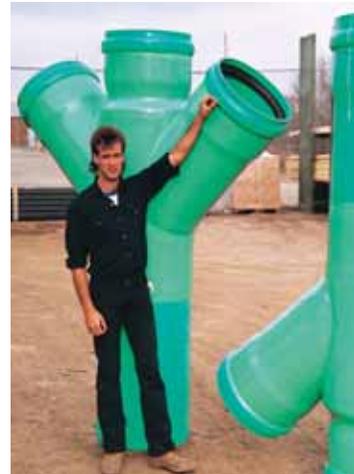
The minimum stiffness ($F/\Delta Y$) must be 320 kPa (46 psi) for DR35 pipe, and 625 kPa (90 psi) for DR28 pipe.

Fittings

Injection-molded gasketed PVC fittings shall be certified to CSA B182.1 or CSA B182.2. Fabricated fittings must conform to CSA B182.2 and ASTM F679.

Joints

Sealing gaskets shall meet the requirements of CSA B182.2 and ASTM F477, with the additional requirement that the pipe joints shall be able to withstand 345 kPa (50 psi) hydrostatic pressure.



Lubricant

Assembly of Ring-Tite pipe and fittings shall be done in accordance with the manufacturer's recommendations using only IPEX PVC pipe lubricant. Substitute lubricants shall not be used.

Colour Coding

Pipe shall be colour coded as follows: green for DR35; white for DR28.

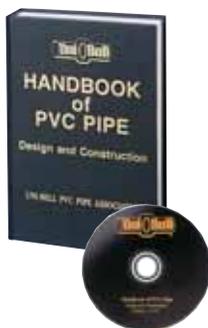
For complete design and installation guidelines:

"IPEX Installation Guide for Sewer Pipe and Fittings" is available free from your nearest Customer Service Centre, IPEX sales representative or distributor.



"Uni-Bell Handbook of PVC Pipe, Design and Construction"

This comprehensive reference manual, with over 470 pages, covers all aspects of design and installation for PVC pipe and fittings.



"Uni-Bell External Load Design for Flexible Conduits"

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High Flow Capacity

Ring-Tite DR35 and DR28 PVC pipe and fittings have an extremely smooth inner wall. Their assembly requires very few joints, and the pipe can be buried at minimum slopes. Since this type of PVC sewer system has a 0.009 Manning friction coefficient, design engineers can use smaller diameters of PVC pipe when compared to rough-walled pipe.

Easy To Maintain

The nonporous inner wall of PVC pipe virtually eliminates encrustants from adhering to its surface. Consequently, the sewer system stays cleaner longer, reducing the cost of maintenance.

Easy Handling

IPEX Ring-Tite DR35 and DR28 PVC pipe offer numerous handling benefits. Their light weight is a significant cost-saving benefit during installation when compared to heavier pipe whose handling requires the use of more expensive equipment. Also, Ring-Tite pipe can be easily cut and bevelled on-site using standard construction tools.

Excellent Abrasion Resistance

Because of its inherent dense, smooth construction which provides the product with high wear resistance, PVC pipe outlasts conventional pipe. A University of California study has shown that as acid levels rise, rough-walled pipe made of concrete abrades much more rapidly than PVC pipe. IPEX PVC piping is highly abrasion-resistant, making it the premier choice for stormwater lines with high flow velocities.

Corrosion – A Thing of the Past

PVC is an excellent raw material for producing extremely durable pipelines that resist corrosion and chemical attack year after year. Ring-Tite pipe contains no ferrous material and eliminates the need for costly pipe lining. Even in prolonged contact with the acidic wastes legally discharged in industrial sewers, it will not corrode or leak.

The standard gaskets used for Ring-Tite pipe are unaffected by fluids found in ordinary domestic effluent. Other types of gaskets are also available to meet specific needs and criteria. Please consult an IPEX representative for details.

Proven Strength

Industry standards such as ASTM D3034 recommend a long-term deflection of 7.5% for PVC pipe. This value assigns a conservative safety factor of 4 to 1 for DR35 pipe.

Meeting the Demands of your Entire System

IPEX provides a comprehensive range of Ring-Tite™ Gasketed Sewer fittings for completing the construction of your PVC system. IPEX can also provide perforated sewer pipe to meet most any requirements. Our service centres can provide you with detailed information about these products.



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About IPEX

IPEX is a leading supplier of thermoplastic piping systems. We provide our customers with one of the largest and most comprehensive product lines. All IPEX products are backed by over 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers, the IPEX name is synonymous with quality and performance.

Our products and systems have been designed for a broad range of customers and markets. Contact us for information on:

- Acid waste systems
- PVC, CPVC, PP, FR-PVDF, ABS, PEX and PE pipe and fittings (1/4" to 48")
- Industrial process piping systems
- Double containment systems
- High purity systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Electrical systems
- Telecommunications and utility piping systems
- Irrigation systems
- PE Electrofusion systems for gas and water

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IPEX maintains a policy of ongoing product improvement. This may result in modifications of features and/or specifications without notice.

